

The UK Nuclear Deterrent

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“We’ve got to have that thing over here, whatever it costs ... we’ve got to have the bloody union jack flying on top of it” –Ernest Bevin



Ernest Bevin’s quote on nuclear weapons still informs much of the debate around the UK’s nuclear deterrent today.

What the then foreign minister said, in one of the secret meetings to discuss Britain developing nuclear weapons in 1946, has developed its own kind of folklore. Other oft cited reasons to highlight the supposed ridiculousness of British nuclear weapons such as using nuclear weapons to get America’s attention and to keep/get/retain the UK’s seat on the UN security council keep going around.

Ernest Bevin's patriotic quote is in my opinion a terrible reason for developing nuclear weapons. But the decision to acquire nuclear weapons didn't rest on the back of the comments of a single minister. [The British Nuclear Experience](#), by John Baylis and Kristan Stoddart unravels the complex issues and multiple independent stakeholders involved in the UK's decision to develop nuclear weapons. There was a 'state of mind' in UK nuclear culture that propagated the idea in UK strategic culture during the cold war. However, we are not held to the reasons of the past. We must dispassionately weigh the evidence on having a nuclear capability in the UK based on the today's security requirements.

July 2016 Vote on Trident

On the 18th July Parliament will [debate a motion](#) on the UK's nuclear deterrent. Specifically, if passed it will allow the development to continue for 4 new submarines to replace the UK's current fleet in 2027. These submarines will carry out Continuous At Sea Deterrence, an operation where one of the four submarines will always be at sea, ready to fire Trident D5 ballistic missiles armed with nuclear warheads.

The missiles themselves, Trident D5, are staying the same, as is the warhead (nuclear weapon) design inside it. To most, this is beside the point. This vote is about the UK having nuclear weapons. In this article I hope to answer quite a few badly reasoned articles in the run up to the debate by people who [really should know better](#).

Second Strike

Using submarines makes it nearly impossible for an opponent to destroy all your nuclear weapons. This is why it is often referred to as a second strike weapon. This means if the entire UK was annihilated, we would still be able to [credibly inflict unacceptable damage to the perpetrator of this strike](#). You never have to fire your missiles because an opponent understands you have the ability to inflict unacceptable damage on them if they attack you first.

The UK is a relatively small landmass off the coast of the Eurasian continent, close to friendly and potentially hostile countries. Housing UK missiles in silos would make them relatively easy to target and destroy. This is the main reason this idea was rejected in the [2013 Trident alternatives review](#). For similar reasons the UK no longer retains nuclear bombers. The UK's main ally, the United States, has a very different role. The US is a large landmass far away from its potential opponents, so is more suitable for strategic nuclear weapons (i.e. nukes in silos). It also has decided to retain capability to provide an extended deterrent to NATO allies in Europe and North America (Canada) and also to Japan and South Korea. It keeps nuclear-armed submarines for the same reason the UK does, for an assured second strike capability.

Deterrence

One of the problems in public debate about the nuclear deterrent is that it is said that nuclear weapons [are never used](#). I do not agree. There is always a submarine in the ocean able to provide a credible response to an attack on the UK. This is what the MoD means when they say the [system is used every day](#).

Deterrence is defined as causing an opponent not to perform an action because they cannot afford the consequences of that action. The price the UK puts on an opponent is high indeed—a mass strike with nuclear weapons on their territory. In the case of the UK's deterrent, that means an opponent cannot be certain if in the event of an attack on the UK that we would not respond. Of course this depends greatly on the chain of command, [including the Prime Minister](#).

But does deterrence work? Outside of the corridors of power the debate is far from over. But there is reasonable evidence in favour of deterrence in some instances. Kenneth Waltz and Scott Sagan cover most of the ground in [The Spread of Nuclear Weapons: A Debate Renewed](#). One of the major points in this debate is that nuclear weapons provoke caution in leaders and deter war, at least between states that have a nuclear deterrent. On the other side of the debate is that miscalculation, error and accident are inherent in having a nuclear weapon capability.

I can't substitute for all the literature on nuclear deterrence in a single short article but my observation is that nuclear weapons did seem to invoke caution in avoiding direct conflict between the US and Soviet Union in the cold war. This is caution that is likely even greater than would have been present when seeking to avoid a totally non-nuclear WWII if there were no nuclear weapons around. However, nuclear weapons did not deter non-nuclear states attacking nuclear-armed states, such as China attacking the USA in the Korean war.

Who is the UK deterring? Is the UK trying to deter an opponent using WMD? Just nuclear weapons? Or from European war? [In the UK's history we have tried to oppose all the above.](#)

Nuclear Weapons After the Cold War

Today, the cold war is over. The UK's current nuclear doctrine is effectively to only use nuclear weapons against a nuclear armed state that has threatened it or attacked it.

The exact doctrine, from the 2015 SDSR is:

“The UK will not use, or threaten to use, nuclear weapons against any Non-Nuclear Weapons State party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). This assurance does not apply to any state in material breach of those non-proliferation obligations. While there is currently no direct threat to the UK or its vital interests from states developing weapons of mass destruction, such as chemical and biological capabilities, we reserve the right to review this assurance if the future threat, development or proliferation of these weapons make it necessary.”- SDSR 2015

In practice, the UK's deterrent today is to counteract Russia, No other potentially aggressive state today has the capability to strike the UK directly. In the medium term future, even if Iran did indeed develop nuclear weapons, and even with China or Pakistan developed even longer range missiles, or North Korea had a credible nuclear-armed submarine this would not change. Of course just because the UK is not

threatened directly does not mean these new capabilities would have a major influence on UK security issues but they would not likely change the nuclear posture.

Nuclear-armed submarines are mobile, but they tend to be restricted to the North Atlantic. Submarines are also quite slow, they need to be to be silent, so 'global' submarine missions are quite difficult.

The problems with nuclear weapons

Nuclear weapons also come inherent risks. There have been [serious accidents](#) and [miscalculations](#). Supporters of nuclear weapons are too quick to ignore the seriousness of these incidents. The possibility of a rogue commander launching an attack is also greatly disturbing. [Morale of staff at US missile silos](#) is a serious issue that also cannot just be fixed. The well-documented Cuban missile crisis was the closest we ever came to a nuclear exchange between two countries based on terrible miscalculation on both sides. The crisis is often used by both proponents and opponents of nuclear weapons. Opponents highlight the conditions that caused the crisis and proponents highlight how it was resolved.

Does the UK's nuclear arsenal cause proliferation?

How much do these issues apply to the UK? Whilst the UK arsenal is thought to lend legitimacy to other countries pursuit of nuclear weapons I would offer a word of caution. I do not believe the UK's possession of nuclear weapons is the reason they are attractive to North Korea and Iran, or even Brazil, Egypt or historically, Sweden. The reasons countries pursue nuclear weapons are diverse and often in the case of political leaders driven by domestic political reasons as much as security.

The UK, the UN Security Council and nuclear weapons

The UK gained a permanent seat on the UN Security Council when it was founded in 1945. The five permanent members of the Security Council are also the five nuclear weapons states as defined in the [Nuclear Non Proliferation Treaty](#) (NPT). However, all these permanent members tested nuclear weapons after they gained permanent seats on

the Security Council. The permanent members of the Security Council should be seen as where the chips fell after WWII. Similarly these states were also best placed to develop nuclear weapons first. There is no direct link with being a permanent member and possessing nuclear weapons.

For this reason, the UK would be free to disarm and retain its seat on the UN Security Council. Nuclear weapons are thought to give prestige. However, which country is thought to have more influence in global affairs: Germany or the UK? The German economy, and its position as de-facto leader of the European Union gives its current prestige, with not a WMD in sight (forgetting that US extended deterrence means that through NATO US nuclear missiles are housed in Germany).

Will nuclear submarines become obsolete?

In February the then Shadow Labour Defense Secretary, Emily Thornberry, claimed that underwater systems within 10 years would render the UK nuclear deterrent obsolete. This truth of this statement is critical in the decision to commit vast sums to developing new submarines. The problem is that such definite statements about technology that has not yet been invented are hard to disprove. Also the timeframe for the successor class of nuclear submarines is the next 50 years, where an awful lot of new developments will occur.

Always a cat and mouse game between offense and defense, submarines have a long history adapting to technologies designed to locate them and deny them access to areas of the sea. Early submarines had to surface regularly due to their carbon-fuel engines. Anti submarine warfare was then based on detection of periscopes and submarines close to surface, as well as under-sea mines.

The reason submarines have been so effective through introduction of SONAR and satellite is that there is no good detection system that works in the sea. Light penetrates enough to sustain visibility for about 200 m and if you go even deeper there is no visibility at all. Temperature and salinity variations make it such that even with sound (SONAR) and beyond the visible spectrum no technology exists that makes the sea

transparent. Satellites have been successfully used to map the ocean floor using LIDAR, but the temporal and spatial resolution is nowhere near that needed to find submarines. Seafloor relays and SONAR buoys as well as surface ships and reconnaissance planes are the best bet with especially when deployed around choke points.

Underwater drones, encompassing Unmanned Underwater Vehicles (UUV), Automated Underwater Vehicles (AUV) and Remotely Operated Underwater Vehicles (ROV) are being developed that will greatly enhance the ability to monitor submarines. Could they be deployed outside Faslane and just follow UK submarines as they head into deep waters? Could an opponent just instrument the ocean with micro relay stations that effectively make the ocean transparent? The answer is probably and probably. However, this completely ignores the ability to develop effective countermeasures. The UK builds its own drones to thwart other drones, it develops systems to detect nearby drones etc. The leaders in this technology are in the US and Europe, not Russia or China and certainly not North Korea. However, as a note of caution, sophisticated unmanned aerial vehicles have been rapidly adopted globally, showing that if the US does develop a new underwater capability opponents may be soon to follow.

Cyber-war and nuclear weapons

There is a great deal of uncertainty around what cyber attacks could and could not do. Already, [attacks on key infrastructure such as the SCADA](#) (Supervisory Control and Data Acquisition) systems are thought to be a significant threat, with the potential to disrupt vital infrastructure. The US [reportedly](#) had a cyber attack, codenamed Nitro Zeus prepared to disrupt Iran's air defense system, communications and power grid.

The ability to be able to perform a cyber attack on nuclear submarines is considerably more difficult. Whatever it may be possible to achieve by disrupting systems, an unauthorised launch not possible as the missiles need to be physically loaded into the bay before launch. Disruption of a nuclear submarine, combined with a full scale attack, nuclear or otherwise is much harder to place risk on, and would really require an expert in that field to describe adequately.

An insurance policy?

One of the most frequent lines in the nuclear debate is that this is the ultimate guarantor of UK sovereignty. This the UK's ultimate insurance policy. No home insurance policy works by murdering your burglar and their whole family after they steal your TV. In my efforts to come up with a suitable analogy I fail. There is no good analogy for what a nuclear deterrent is supposed to do.

How could the UK contemplate using such a weapon?

The ability to deter means the ability to credibly launch nuclear-armed missiles. That means human beings have to consciously decide to launch these weapons knowing they are about to end hundreds of thousands, if not millions of lives. Nuclear weapons are so terrible because they are indiscriminant. They have such large areas of effect that they cannot possibly distinguish between military personnel and civilians. Regardless, is killing so many people just because they are in a uniform or not morally justifiable? The survivors suffer after effects for decades afterwards.

The answer likely to be given when asking an official is that they do not wish to do so at all. It is the first responsibility of government to protect its own citizens. To protect UK citizens the UK needs a method to stop an aggressor firing hundreds of ballistic nuclear armed missiles at the UK. The only effective method to do this that we know of is possessing our own deterrent. I am giving a very big topic short shrift but I can broadly agree with this line of reasoning.

The UK makes itself a target by having nuclear weapons?

I just don't find this to be credible. Poland, Japan, West Germany, Germany all have legitimate concerns regarding nuclear weapons being used against their country. Geopolitics is the reason, not that the UK possess nuclear weapons.

Strategic Decoupling

Much of the reason for the UK retaining its nuclear weapons and its reason for keeping them during the cold war was for the fear that the USA might not really want to trade Berlin for Boston, or London for New York in a limited nuclear exchange with the Soviet Union. I think this debate is very complex and I haven't quite answered these questions to my own satisfaction. Yet, in any current and future climate if there is a 'great power' conflict where Russia threatens Europe the USA will be involved. Strategic decoupling was never really on the cards.

However, there is the possibility of a return of an isolationist foreign policy in the USA. Is the UK in violation of international disarmament obligations by renewing Trident? Personally I think the UK is on shakier ground here. Article VI of the NPT is legally binding and deals with disarmament:

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

I have read cases where serious people have genuinely argued that we fulfilled this article already in the 1970s because we sincerely tried to disarm and failed so the USA, and likely the UK can just carry on. But the NPT members vote to extend the treaty every five years. In 1995 they voted to extend the treaty indefinitely, and did not do so without expecting some movement on disarmament.

However, this particular Parliamentary vote is about retaining capability, not increasing it. This has not always been the case; the Polaris to Trident upgrade happened under the NPT. What is true is that of the five Nuclear Weapons States the UK has done more than any other to disarm.

Is the UK's deterrent Independent?

How reliant is the UK's deterrent on the US? Does it need Washington's permission to fire? The deterrent is 'operationally independent'. People who believe the UK Prime Minister needs to call Washington to fire the Trident missiles will not be persuaded by a public document or statement affirming the independence of the system.

The whole deterrent though is most certainly reliant on the US, for the [Trident D5 missiles and even fissile material](#). I don't think that this should effect the decision to build submarines either way. On one hand it seems to be a way for the UK establishment to save face, on the other it creates a stick for proponents of disarmament to beat the establishment with – they know they are being deliberately misinformed when the deterrent is declared independent.

Can the UK afford a nuclear deterrent?

It is likely whatever figure is being published for the cost of the successor class of submarines will rise. In 2006 it was £15bn to £20bn. In [2014](#) it was £17.5bn to £23.4 bn and in the SDSR just one year later was £31bn + £10bn contingency. We will see if next week brings new figures.

If Trident was cancelled the money would not be spent on hospitals and education, in a classic fantasy 'we'll cancel a programme you don't like and divert the money to a programme you do like' scenario. It would probably all not end up back in the MoD either.

The real way to think about the question is: if trident was free would the UK want it? Well as long as the threat from Russia's nuclear capabilities remains I believe the answer to this is yes. So then what is cost above which it would be too expensive? To answer this consider how a security capability that is described as being existential could be too expensive? The problem is when it degrades conventional capabilities too much. If spending on the conventional military becomes too small the UK is then left with

problems when responding to threats. In what is dubbed a gap on the response ladder, we are left with difficulty in responding appropriately to threats.

Extended Deterrence in the UK

Why couldn't the UK disarm and rely on the US for extended deterrence? There are two principle lingering questions about this that I have discussed. First, the strategic decoupling possibility, which I do not view as credible. Second, that the US adopts a more isolationist foreign policy. This is probably the most serious reason to consider renewing Trident. The forces that propelled Donald Trump to the frontline in US politics are not new and will play a role in future US elections, come what may this November. Also the US role in Europe may change over the course of 30-40 years, similarly to the [US role in South Korea altering in the 1970s](#).

Final Observations

Not building new submarines is [portrayed](#) as a gamble with our national security. It is much less of a gamble if remaining under an extended deterrent is taken into account. Retention of the deterrent raises serious concerns about overall UK force numbers and the ability to respond to threats when so much of the UK defence budget is devoted to the high cost of keeping a nuclear capability. I am convinced the UK should have a nuclear deterrent in a geopolitical climate where [US-Russian disarmament is stalling](#). If the UK disarmed it would, like the rest of NATO, come under extended deterrent from the US, which is not under any real threat of strategic decoupling and never probably was. The US taxpayer will not be prepared to finance the security of Europe indefinitely. Domestic political forces in the US may be the most real concern to the future of extended NATO deterrence underpinned by US capabilities.